The

PUGET SOUND CHEMIST

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FEBRUARY, 1951

The PUGET SOUND CHEMIST

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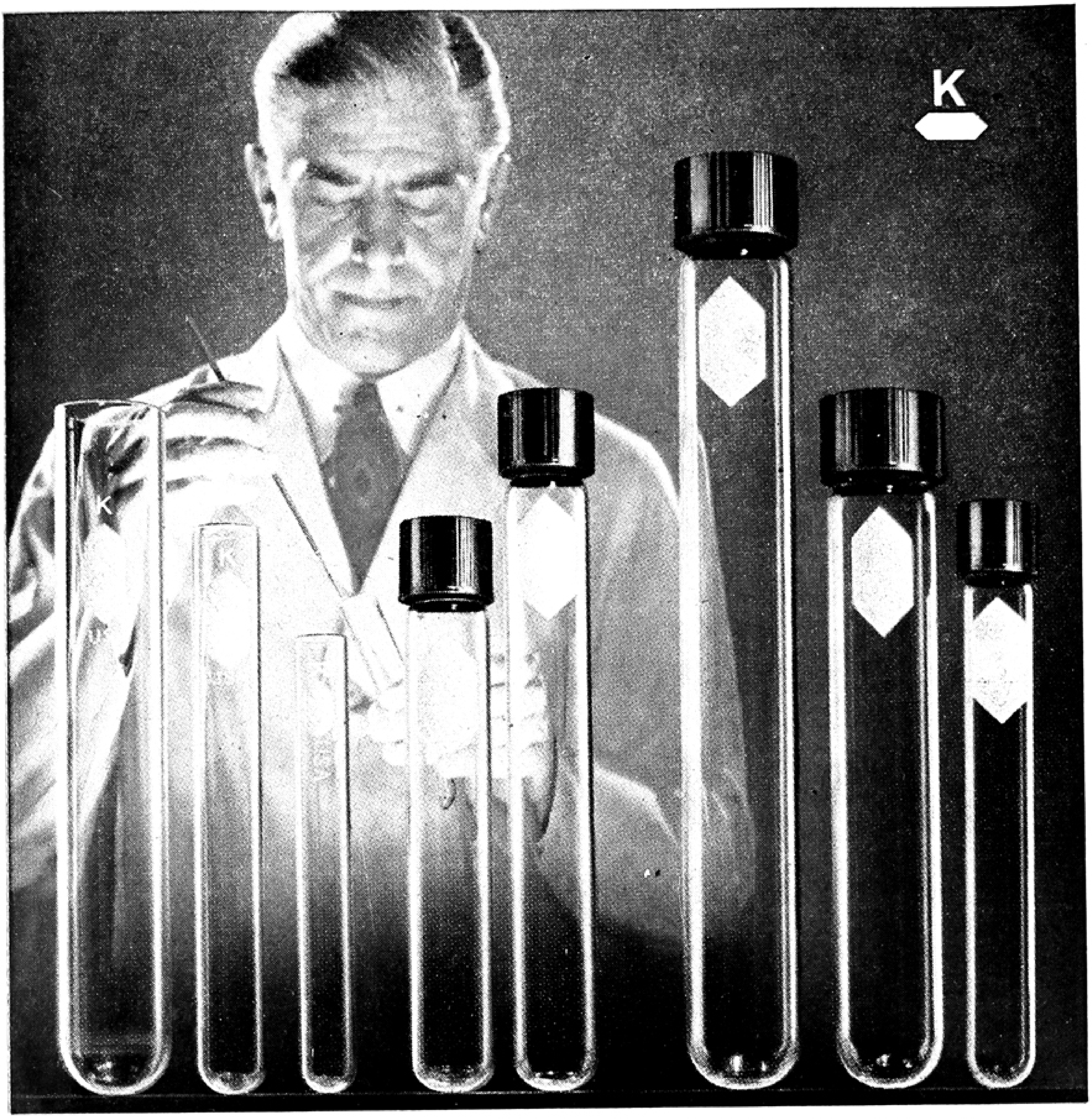


Kimble Culture Tubes No. 45048 and No. 45066 (with screw cap). Provided with sandblasted spot for marking.

February Meeting

Puget Sound Section

AMERICAN CHEMICAL SOCIETY

Time

Thursday, February 15, 8:00 p. m.

Place

Seattle, 131 Bagley Hall, University of Washington

Speaker

DR. H. K. BENSON, University of Washington Department of Chemistry and Chemical Engineering

Subject

CHEMICAL UTILIZATION OF COAL

Refreshments and Social Hour After Meeting

This May Be Your Only Notice of

MARCH MEETING

Puget Sound Sections of

A. C. S. and A. I. CH. E.

Tacoma, March 16 — Field Trips

Speaker

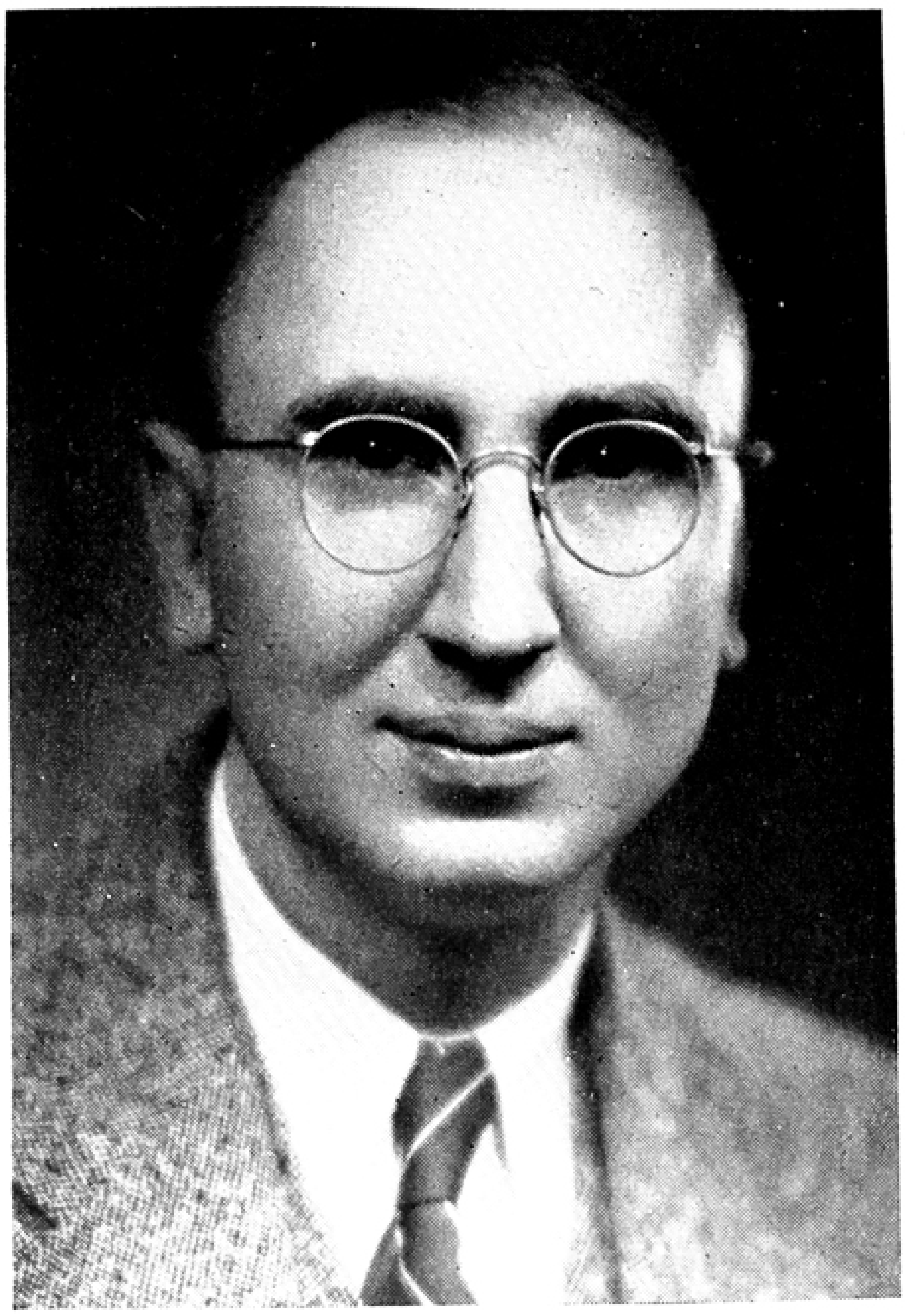
Dr. Kenneth A. Kobe, Department of Chemical Engineering, U. of Texas

Subject

Submerged Combustion

These friends make the PUGET SOUND CHEMIST possible . . .
Please Patronize Them

MARCH SPEAKER



KENNETH A. KOBE

Biography

Kenneth A. Kobe is a Minnesota product, born at Osakis, Minnesota, in 1905. He attended the University of Minnesota, from which he received a B.S. in Ch.E. with Distinction in 1926, the M.S. in Ch.E. in 1928, and the Ph.D. degree in 1930.

After a year of industrial experience he went to the University of Washington (Seattle) in 1931 as an instructor in chemical engineering. In 1941 he went to the University Texas as Graduate Professor of Chemical Engineering. From 1942 to 1944 he was on active duty with the Chemical Warfare Service with rank of Major. He is now a Lieutenant Colonel in the Air Force Reserve.

He has been a contributor to many scientific, technical and trade publications and has over a hundred articles to his credit, as well as several patents. His books on **Inorganic Process Industries** and **Chemical Engineering Reports** are used at numerous schools. His research work has been in the field of submerged combustion equipment and processes, chemistry of gases, organic unit processes and the utilization of industrial wastes.

He is an associate editor of the "Journal of Chemical Education." He is a member of the American Chemical Society and the American Institute of Chemical Engineers, as well as several honorary fraternities.—See also Page 9 of January Puget Sound Chemist.

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Summary

SUBMERGED COMBUSTION

By Kenneth A. Kobe

Submerged combustion is the burning of a fuel in such a manner that the combustion is surrounded by the liquid and the products of combustion bubble up through the liquid. Because of this intimate contact between the gases and the liquid high thermal recoveries are possible as well as direct chemical reactions, as with carbon dioxide.

The development of submerged combustion since the early work of Brunler in 1887 is discussed and shown in slides. Industrial equipment is available now which uses gas as a fuel.

Submerged combustion is used extensively at present in certain industries where it fulfills unique requirements. The nature of these requirements and the fields of utilization of submerged combustion are discussed.

The operation of submerged combustion is demonstrated by a portable lecture-table burner.

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A. C. S. SEPTEMBER MEETING

Plans have been made to hold the 120th national A. C. S. meeting in New York City on September 3-7. In the cases of some divisions, abstracts and titles of papers must be submitted by March 1. The time for preparation of papers for the meeting is **now.** The 12th International Congress for Pure and Applied Chemistry is scheduled for September 10-13, 1951, also in New York City. **Plan to attend both meetings.**

MEET THE OFFICERS

Chairman Edward Clay Lingafelter, Jr., began his activities in Toledo, Ohio, in 1914, but we will forgive him for having lived in Toledo because he moved to the West Coast at an early age.

He obtained his Bachelor of Science degree from the University of California in 1935 and was awarded the degree of Doctor of Philosophy at the same university in 1939, having worked in Physical Chemistry under the late Professor E. D. Eastman. Shortly thereafter he came to the University of Washington, where he is now Associate Professor of Chemistry.

All of his research and undergraduate students know him as a lucid, inspiring and approachable teacher. He has published a number of original research papers on surface-active agents and on the determination of crystal structure by E-ray diffraction.

The Lingafelters prefer boys, of whom they have four. When they can find time, they enjoy vacationing on the Stillaguamish River.

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Chairman-Elect — Charles V. Smith is a member of Northwest Laboratories, Seattle, a firm active in commercial laboratory work, industrial research and consultation. He took his B.S. and M.S. in Chemical Engineering from the University of Illinois in 1933 and 1934 respectively and went directly to the rayon technical division of the duPont Co. (Buffalo), who sponsored his graduate fellowship at the University. During six years with duPont he was active in the development of high tenacity rayon for tire cord, chemical engineering equipment design, evaluation of materials of construction, drying studies and process instrumentation.

CHARLES V. SMITH

Following this, he was research engineer for the Univis Co., Dayton, Ohio, primarily concerned with the development of plastic ophthalmic and instrument lenses, a project which was shelved for the war in 1942. From 1942 to 1944 he was in the research laboratories of Norton Co., Worcester, Mass., active in powdered metal problems of the diamond wheel division. In 1944 he returned to the Univis Co. as director of research and organized a Central Research and Quality Control Laboratory for plastic and glass lens manufacturing. In 1946 he and T. H. Williams, partners in the Northwest Laboratories, came to Seattle.

Mr. Smith has more than twenty patents in the fields of rayon, plastics, chromium plating, equipment and instrumentation. He is a member of the A.I.Ch.E., National Society of Professional Engineers and is a registered engineer in the States of Ohio and Washington. In 1947 he was chairman of the Seattle Chapter of the Washington Society of Professional Engineers and represented the A.I.Ch.E. in drafting of the Engineers Registration Act which became effective in 1948. He is 40 years old, married, has three daughters and enjoys living farm style "in the sticks" north of Kenmore. —**C. V. S.**

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Secretary Jim C. Drury — Graduating from the University of Washington in 1940 (B. S. in Chemical Engineering), Jim Drury was first employed as Assistant Chief Chemist with the Coos Bay Pulp Co. and was soon promoted to Chief Chemist. From 1942 to date he has been associated with the Lyle Branchflower Co., from 1942 to 1945 as Chief Chemist and since that time as Vitamin Plant Superintendent. He is a member of the A. I. Ch. E. and A. C. S.

He has two children, a boy 9 years and a girl 12 years old. At their summer home near Maxwelton Beach, the Drury family finds considerable enjoyment in salmon fishing.

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Treasurer Norman W. Gregory, Assisttant Professor of Chemistry at the Uni-

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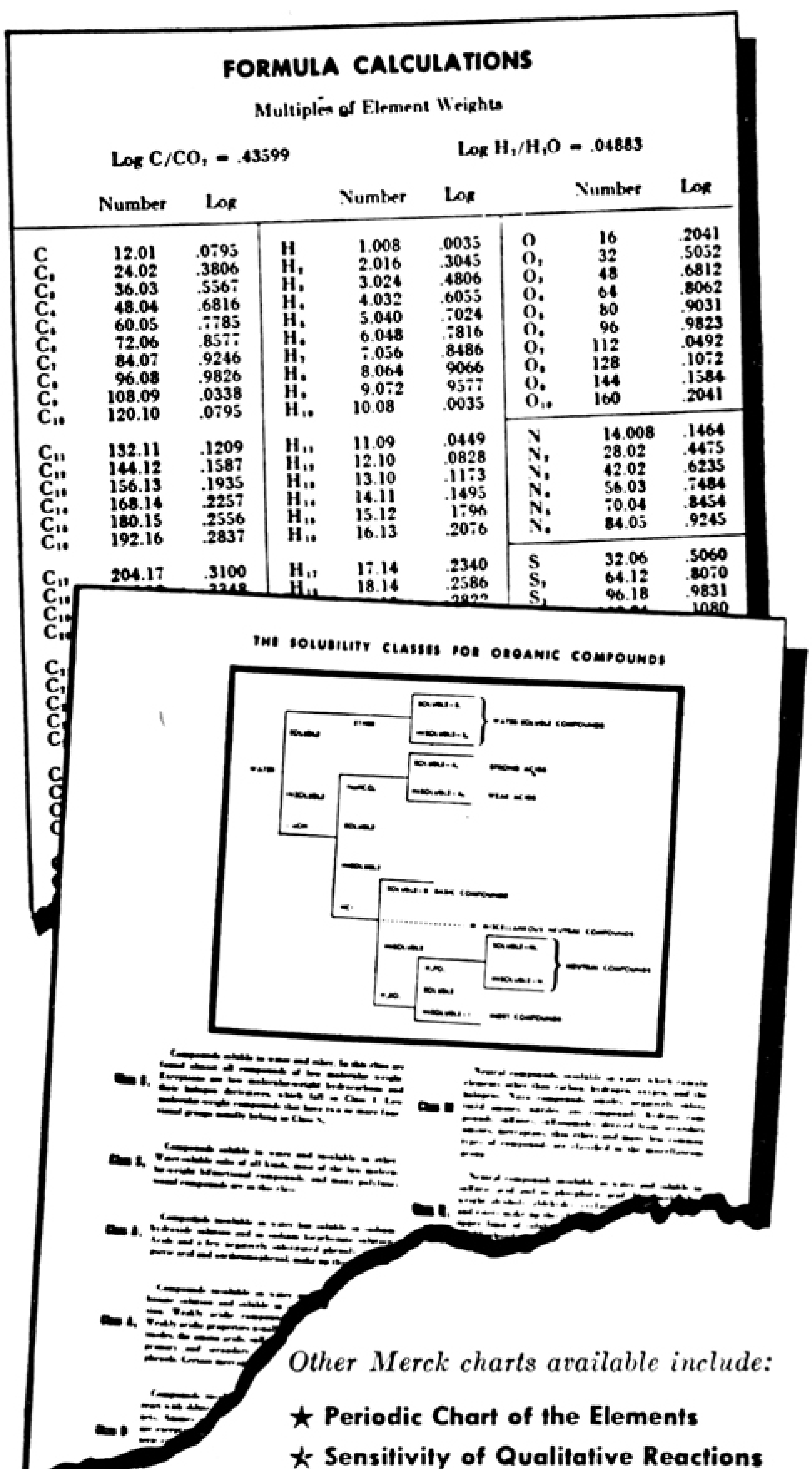
FORMULA CALCULATIONS

Multiples of Element Weights

Log C/CO_2 = .43599 Log H_2/H_2O = .04883

	Number	Log		Number	Log		Number	Log
C	12.01	.0795	H	1.008	.0035	O	16	.2041
C_2	24.02	.3806	H_2	2.016	.3045	O_2	32	.5052
C_3	36.03	.5567	H_3	3.024	.4806	O_3	48	.6812
C_4	48.04	.6816	H_4	4.032	.6055	O_4	64	.8062
C_5	60.05	.7785	H_5	5.040	.7024	O_5	80	.9031
C_6	72.06	.8577	H_6	6.048	.7816	O_6	96	.9823
C_7	84.07	.9246	H_7	7.056	.8486	O_7	112	.0492
C_8	96.08	.9826	H_8	8.064	9066	O_8	128	.1072
C_9	108.09	.0338	H_9	9.072	9577	O_9	144	.1584
C_{10}	120.10	.0795	H_{10}	10.08	.0035	O_{10}	160	.2041
C_{11}	132.11	.1209	H_{11}	11.09	.0449	N	14.008	.1464
C_{12}	144.12	.1587	H_{12}	12.10	.0828	N_2	28.02	.4475
C_{13}	156.13	.1935	H_{13}	13.10	.1173	N_3	42.02	.6235
C_{14}	168.14	.2257	H_{14}	14.11	.1495	N_4	56.03	.7484
C_{15}	180.15	.2556	H_{15}	15.12	1796	N_5	70.04	.8454
C_{16}	192.16	.2837	H_{16}	16.13	.2076	N_6	84.05	.9245
C_{17}	204.17	.3100	H_{17}	17.14	.2340	S	32.06	.5060
			H_{18}	18.14	.2586	S_2	64.12	.8070
						S_3	96.18	.9831

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versity of Washington, is our treasurer for 1951. He was born in Albany, Oregon, and is 30 years old. He received his B. S. and M. S. degrees from the University of Washington. Graduate work at Ohio State University led to the Ph.D. degree in December, 1943. From January, 1944, to September, 1946, he was employed as Research Chemist at the Radiation Laboratory of the University, under contract with the Manhatten Project. Since September, 1946, he has been a faculty member of the Department of Chemistry and Chemical Engineering. His research interests are in physical and inorganic chemistry. His hobby is photography.

The Gregorys have two children, a girl 4 and a boy 6 years old.

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NOMINATIONS FOR NATIONAL A. C. S. OFFICES

The Committee on Nominations and Elections has asked for suggestions for the following national offices:

President-Elect
Director-at-Large
Regional Director, Fourth District (South)
Regional Director, Sixth District (West of Mississippi)
Council Policy Committee (only Counselors eligible).

The names of persons proposed should be accompanied by a biographical statement which includes a list of Society posts which have been held and the reasons for considering the person qualified for the position to be filled.

The deadline is March 19,1951.

—E. C. L.

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REGIONAL MEETING

Present indications are that the Pacific Northwest Regional meeting will be held at the University of Washington some time in the first half of June. Deadline for papers will be April 15, 1951. **Let's get started with those papers.**

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The most valuable sense of humor is the kind that enables a person to see instantly what it isn't safe to laugh at.—The Crucible.

MINUTES OF THE 292ND REGULAR MEETING (Dec. 21, 1950)

Puget Sound Section of the A. C. S.

The meeting was called to order by Mr. Collis Bryan, Chairman, at 8:15 p. m.

The membership was informed of the Merck Graduate Fellowship Award of $2,000 to be awarded this coming year.

The Treasurer, Dr. Aaron Markham, gave a report on the financial state of the Section and Puget Sound Chemist.

The joint speakers of the evening, both of the University of Washington's Department of Chemistry and Chemical Engineering, were introduced by Dr. Lingafelter.

Dr. W. T. Simpson's **"Remarks on the Nature of Aromaticity"** gave an excellent background on the fundamental aspects of the structure of aromatic compounds.

Dr. A. G. Anderson, Jr., spoke on **"Azulene, the Blue Aromatic Hydrocarbon."** His very interesting discussion on the structure of this compound and the method of improved synthesis was enlightened by his reference to the preceding lecture by Dr. Simpson on basic structure.

At the conclusion of the meeting, the Chairmanship of the Section was yielded to Dr. Lingafelter by Mr. Bryan.

The meeting adjourned at 9:15 p. m., followed by a social hour.

—Jim C. Drury, Secretary.

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GROWING UP

Our section really is growing. We now have 502 members. Among other reasons this is important because it means that the Nominating Committee will meet in February for the purpose of submitting nominations for a **third** national councilor. Let's make the most of this opportunity and select a good man for the job.

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NEW MEMBERS

DURSCH, H. Robert, Skagit Valley Junior College, Mt. Vernon, Wash.

LEBER, Lewis F., 7305 21st N. E., Seattle 5, Wash.

RICHARDS, Roland C., 1539 Iron St., Bellingham, Wash.

SIGMA XI MEETING

Dr. George Scatchard will speak on **"Molecular Interactions in Protein Solutions"** at 8 p. m. on Wednesday evening, March 14, in Room 131, Bagley Hall, University of Washington. **All interested persons are cordially invited.**

Dr. George Scatchard, professor of physical chemistry at M. I. T., has been a member of the staff since 1924. He received his A.B. degree from Amherst College in 1913, and his Ph.D. from Columbia University in 1917. He served during 1917-1919 as first lieutenant in the Sanitary Corps, USNA. At Amherst he was an associate professor until 1923, when he went to M. I. T. for a year as National Research Fellow. Then he became an assistant professor for 1924-26; associate professor, 1926-1934, and professor, 1934 to date. He held a Guggenheim fellowship for 1931-32. During World War II he worked at SAM, Columbia University, on the atomic bomb and was in charge of products from plasma fractionation and other blood substitutes for the Office of Scientific Research and Development. He also served for a time as chief of the Scientific Research and Control Branch of the American Military government in Germany. He is the author of numerous papers, in former years, largely on chemical equilibrium and reaction rates in liquid mixtures, including solutions of electrolytes. In recent years, besides the continuance of earlier work, he has carried out investigations on the preparation and properties of serum and plasma proteins, the osmotic properties of protein solutions, and the effect of salts on proteins, their attraction for small molecules and ions. Dr. Scatchard has served as an associate editor for the JACS and the Journal of Chemical Physics. —**H. V. Tartar.**

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THANK YOU

The editorial staff acknowledge the assistance of E. C. Lingafelter, C. E. Higer, Joseph Heitman, A. W. Stout, A. G. Anderson, Jr., C. V. Smith and H. V. Tartar, who very materially aided in the preparation of this issue.

OUR JOB IN EMERGENCY

(Editorial by G. L. Putnam)

The first duty of a good general or politician is to study and thoroughly understand his opposition, in order to effectively cope with his adversaries. **The point we wish to make is that as chemists, citizens, and voters of a democratic nation we cannot shirk the responsibility of studying the opposition.** Then only can we decide whether the battle should be fought, and if so, how to proceed.

In World War II, many chemists did not understand what they were fighting for. If more of our non-German people had read Hitler's blueprint, **"Mein Kampf,"** in 1936, the free world would surely have united long before 1941 or 1944 to crush him, increasing the probable life-span of the democratic nations.

It is fortunate that every political leader, whether he be a Hitler, a Churchill, a Truman, a Lenin, or a Stalin, must develop a platform, an ideology, a working handbook for his followers. One cannot supply a blueprint to several million persons and still keep it secret. In order to better understand and cope with those whom a section of the press has for three decades proclaimed to be our adversaries, many scientists will thoroughly study the original writings of the leaders of all nations, as well as reports of their actions (remembering that reports may be and often are distorted by the reporter).

Thus Dr. Robert Swain quotes the January speaker, Dr. Robert Millikan, as follows (The Chemist 27, 473, December, 1950):

"Robert Millikan quotes this extract from Stalin's writings:

> " 'Words have no relation to action —otherwise what kind of diplomacy is it? Words are one things—actions another. Good words are a mask for concealment of bad deeds. Sincere diplomacy is no more possible than dry water or wooden iron'."

An 82-page directory of the chemical industries of Canada has been issued by the Bureau of Statistics, Ottawa, Canada.

SEATTLE NEWS

Phi Lambda Meeting — The Epsilon Chapter of Phi Lambda Upsilon at the University of Washington held a formal initiation and banquet on January 12 in the **Yellow and White Room** of the Husky Union Building. The initiates, top men of their class in the Chemistry Department, gave an entertaining playlet indicating their opinion of chemical developments in a foreign country.

The following were initiated at the meeting: Kenneth Bendschneider, Tung-Whei Chow, Elwood Engler, Glen Farris, James Grover, Donald Hoard, Wiliam King, Stanley Miller, Merrill Muhs, Jack Swanson, Carl Thorsten, Salih J. Al-Wakil, Warren Wittkopf and Roland Zahler.

Professor Arthur P. Herrman, head of the Architecture Department, spoke to the group on the subject of "Trends in Domestic Housing." Professor Herrman, whose headquarters are in the structure known as Old Bagley Hall, expressed a dim view of much modern architecture, including that of the Administration Building. —**Ben Baldwin - G. L. P.**

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The haft of the arrow had been feathered with one of the eagle's own plumes. We often give our enemies the means of our own destruction.—Aesop, "The Eagle and the Arrow."

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SPLICED — Mr. Howard Farson Hand and Miss Dorene Mae Kraule were married on January 24 in the University Lutheran Church. Mr. Hand, a graduate of the Department of Chemical Engineering of the University of Washington, is employed by the Monsanto Chemical Company in St. Louis, Missouri.

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Cut Up

A young surgeon received a telephone call from a colleague who invited him to make a fourth at bridge.

Wife (suspiciously) — "Going out, dear?"

Husband (bravely): "I'm afraid so: it's a very important case. There are three doctors there already."

NEW MILK PRODUCT

Dr. Roy Graves, chemical consultant for Medomilk, Inc., subsidiary of the Meadowmoor Dairy, states that the new Stanwood plant for the production of aseptic milk will be in operation by late February or early March.

The milk is withdrawn under very sanitary conditions in an oxygen free atmosphere, thereby preventing formation of off flavors. Temperature is carefully controlled in order to keep bacterial growth and lipase activity to a minimum. The process is so new and unique that there is no other plant like it anywhere. A formal announcement will be made to press associations in a few months.

—**Clifford E. Higer**

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A. C. S. AWARDS

Nominations are now being solicited for 1952 awards administered by the American Chemical Society. Nominations must be made by a single person, not a group, and are due by June 1, 1951. A list of the awards is given below. For further details concerning necessary qualifications and procedure for nomination, see the Section Chairman. Surely there are members of our section who should be considered!

A. C. S. Award in Pure Chemistry — To a man or woman under 36 years of age who has accomplished research of unusual merit.

Borden Award in the Chemistry of Milk.

Eli Lilly and Company Award in Biological Chemistry.

Fisher Award in Analytical Chemistry.

Fritsche Award. Awarded for outstanding work on essential oils, etc.

Garvan Medal. For women Chemists.

Ipatieff Prize. For outstanding chemical experimental work in the field of catalysis or high pressure.

Paul Lewis Laboratories Award in Enzyme Chemistry.

Precision Scientific Company Award in Petroleum Chemistry.

Scientific Apparatus Makers Award in Chemical Education.

—**E. C. L.**

UNITED NATIONS MEMBERSHIP

Of the 60 members of the United Nations, about 20 are Latin-American countries with average population of about 7 million each. Many of the Latin-American nations do not have freedom of worship, religion and education as we understand it. The Soviet group (Byelorussia S. S. R., Ukranian S. S. R., White Russia, Czechoslovakia and Poland) have five delegates from nations having an average population of more than 40 million. The United States (population 150 million) has one delegate, as does India (population 340 million). Communist China (population 460 million) has no delegate.—From **Handbook of the United Nations and Special Agencies** (1950) and the **World Almanac for 1951.** Ben Baldwin—G. L. P.

◆ ◆

It is getting so that folks hesitate to say they are "in the pink" for fear they may be accused of having leftist leanings.—Everett Herald.

Let's select a good man for our **third** national councilor.

◆ ◆

THE TOWER OF BABEL

By H. H. UHLIG

An interchange of ideas is necessary to social and technical progress. Hence language, which is the vehicle permitting this interchange, is an important part of our civilization. Some centuries ago, the people undertook a project called the Tower of Babel. This incurred the displeasure of the Lord who proclaimed: "Let us go down and there confound their language that they may not understand one another's speech." The project, therefore, failed of completion, for no longer could the workers cooperate toward a common goal.

Science, too, needs a common language easily understood, otherwise we risk failure in our purpose. Unfamiliar vocabularies built up in specialized fields are on the increase. But better understanding is not necessarily implicit. The resultant technical jargon often becomes a play on words, perpetuating hazy concepts or ideas long since outgrown, or serving no better purpose than to confound the public. Bricks are methodically laid on a Tower of Babel.

—By **Dr. H. H. Uhlig, Editor,** J. Electrochem. Soc. Abstract of editorial in the October, 1950, issue. Reprinted by permission of the author.

◆ ◆

CLASSIFICATION

In these days of increasing classification, it is comforting to know that a recent advertisement (CEN, Jan. 15, page 256) indicates we are not out of step (rupees have been converted to pounds in order to have consistent units):

"Chemical Engineer — Ceylon. Salary for Ceylonese and Indians, 850 pounds; for Pakistanis, 1,000 pounds; for Europeans, 960 pounds. Others, 1,200 pounds. . . . Further particulars may be obtained from the Ambassador for Ceylon."

◆ ◆

Silver is one of the best conductors of electricity. Every time we are handed change for a 50-cent piece we get a shock. —Daily Olympian.

PUGET SOUND SECTION A. C. S.

Operating Statement

Income from Tacoma Dinner	35.56	
Income from Allotments	$884.50	
Total Income		$920.06
Operating Expenses—		
Speaker Expense	241.53	
Mailing Expense	67.02	
Refreshments	70.68	
Engineering Council	42.80	
Membership Committee Expense	3.67	
Secretarial Expense	14.36	
Publicity Expense	6.63	
Treasurer Expense	1.76	
Chairman Expense	11.19	
Survey Expense	33.86	
Total Expense		493.50
Net Income to Reserve		426.56

BALANCE SHEET

Cash	$764.37	
Total Assets		764.37
Reserve		764.37

—A. E. Markham, Jan. 30, 1951

PUGET SOUD CHEMIST

Operating Statement

Advertising Income	$2,106.84	
Total Income		$2,106.84
Operating Expense—		
Printing Expense	1,944.80	
Editorial Expense	21.08	
Mailing Expense	121.84	
Total Expense		2,087.72
Operating Income to Reserve		19.12

BALANCE SHEET

Accounts Receivable	300.05	
Less Cash Overdraft	37.47	
Total Assets		262.58
Reserve		262.58

—A. E. Markham, Jan. 30, 1951

CHEMISTS COMMENTS

(We reprint below some original comments by our friend, Dean Joel H. Hildebrand, taken from his classic text, "The Low-Down on Higher Education," James Ladd Delkin, Stanford Press (1948). Unfortunately, we cannot reproduce the illustrations, which add so much to the value of the treatise.)

●

Profous

It is quite unnecessary
For a prof to make so very
Complicated all the learning he diffuses.
This we prove by demonstration
Of the great simplification
One achieves by slight assistance from
the Muses.

This compedium of knowledge
One encounters in a college
Exemplifies reduction ad absurdum,
For these verses give the essence
Of all academic lessons,
As you surely will agree when you have
heard 'em.

●

Education

When many sit in relaxation
While one dispenses information,
We call the process education.

●

●

Education

A child of the new generation
Refused to learn multiplication.
He said, "Don't conclude
That I'm stupid or rude;
I am simply without motivation."

●

Anthropology

In summer I envy the lady
Who lives on the banks of the Amazon;
She just lies around where it's shady,
And doesn't have even pajamas on.

●

Education

"Democracy" and "integration";
"Leadership" and "motivation";
"I.Q.," "M.A." and "correlation";
What comes next in education?

◆ ◆

THE ART OF THE LIMERICK

(Reprinted by permission of the author from the December, 1950, Chicago Section **Bulletin.**)

BY JOEL H. HILDEBRAND

No one, so far as I know, has heretofore written upon this topic; I may hope therefore, following a familiar academic pattern, to become the world's leading authority upon the art of the limerick. The history of the limerick is, indeed, mentioned in the encyclopedia, but only to the extent of confession that no one knows how, or where, or when, this art form was born, so that is that. But I am not going in for mere literary history, my attention is here devoted to a far more profound aspect of the subject: literary criticism.

I am eminently qualified for this task because, First, I have access to all the limericks submitted for the Carl Miner Limerick Contest, a major source; material which furnishes examples of all the faults that could possibly be found in attempts at this art. Second, I have in my own limericks* examples at hand to illustrate all the possible excellencies. Hence, I can dispense with the period of profound study usually considered necessary to the would-be authority. And so, to work.

First of all, as to structure. A limerick is composed of feet, therefore the footwork of the author is even more important than his headwork. These feet have normally three joints; one long and two short. The long joint can be at the beginning, the middle or the end of a foot, thus: dum-de-de or de-dum-de or de-de-dum. These have names which the mere poetaser need not know, but which I, as an authority, have learned. They are, respectively, dactyl, amphibrach and anapaest. I know even more; if a syllable is omitted one has de-dum- which is iambus, or dum-de, which is trochee. Who says I am not an authority!

Next, the feet, in the true limerick, are arranged in five lines thus: 3-3-2-3, with the lines of equal length riming, like this:

A zoology student named Fawkes,
Undertook to cross squirrels with auks;
There resulted because
Of Mendelian laws,
One squirrel, one auk, and two squawks.

Nearly pure anapaest, and very scientific, too!

One of the offerings in the contest began:

Once an electrochemist named Hector

Grabbed hold on a high-voltage connector," etc.

The author evidently cannot waltz, else he would have written something like this:

There was a young fellow called Hector
Who grasped a high-voltage connector,
etc.

And a limerick must rime. One contestant wrote his two short lines this way:

"Distilled, cooked and fried,
From morning till night";

when he could have substituted for the second line something like "But however he tried."

Rime may be supplemented by alliteration, as in this one:

I once met a wizened old wizard,
A-lunching on lentils and lizard.
When I questioned his diet,
He said to me, "Try it;
"It's really quite good for one's gizzard."

But the foregoing points are merely the mechanics of limericating; let us get on to the art of it. A good limerick works up to a climax in its last line, as in this one:

A cannibal chief in Tahiti,
When given a co-ed to eat, he
Said, "One can't deny
She's all right for the eye,
"But to eat she is not very meaty."

The limericks of Edward Lear, often referred to, usually have very weak last lines. Here is one of them:

There was a young lady of Welling,
Whose praise all the world was a-telling;
She played on a harp
And caught several carp,
That accomplished young lady of Welling.

That last line would be more appropriate if it read, "If that was all, why all the yelling?"

Forced rimes, such as the following, play a prominent role in the art:

A lady who lives in Savanna,
Was asked if she played the pi-anna.
"No, honey," said she,
"I should think you could see
"I'm a color-atura sopranna."

Another stunt is to use well-known abbreviations, like the following:

Said a bright little maiden of Fla.
To a boy that she met in the ca.,
"You're a novice, I fear,
"Yu just peck at my ear,
I really prefer them much ta."

Big words, and unusual words invite attention, as in this:

There was a young man of Peoria,
Who said to his girl, "I adore yuh!"
"Our lives assymptotic
"Should be symbiotic."
She replied, "That's a phantasmagoria."

Queer names of places or persons are often nearly irresistible. Here is a sample:*

I know an old man of Durazzo,
I've never known anyone chazzo.
From the time he's begun
Till the moment he's done.
I can only say, "Really is thazzo?"

The two foregoing examples show that I am well acquainted with limericlitura-ture, hence those contestants who plagiarized well-known limericks did not get by me! Nor did those who thought they could pass off a limerick as dealing with chemists or chemistry merely by introducing those words in some connection not characteristic of either. The chemist should be no less honest when limerizing than he is when analyzing, and the limerizer should not be a plagiarizer, nor the limericator a prevaricator!

Now, finally, I come to the perilous part of my subject, one which it would be discreet for me to leave untouched, but which, nevertheless, my duty of thoroughness requires me to face. There is something about the limerick which inevitably tempts the limerist or the limericizer to deal, as does no other art form, with certain natural impulses. But your true limerartist never descends to mere vulgarity or coarseness; he strives for true humor, dipping from that inexhaustible source of humor, naivete.

I venture but one illustration, but I take the precaution of having it printed in very small type, elsewhere in tnis Bulletin (p. 22), so that any one who is offended by reading it will have only himself (or herself?) to blame, for he (or she?) will then be like the spinster who complained to the town policeman that

she could see the boys swimming in the swimming hole near her house all naked and unashamed. The policeman persuaded the boys to change to another hole, a quarter of a mile away. But the old lady complained again that she could still see the boys by aid of her opera glass.

***Peter Pauper's Limerick Book,** Peter Pauper Press, Mount Vernon.

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HUMAN RELATIONS

Excerpts of Paper by

W. HAROLD CHASE

Director of Public Relations, General Foods Corporation

A dozen approaches to this dramatic subject have convinced me that I have only three things to say.

(1) In all the history of man the periods of freedom have been measured in years, but the periods of serfdom have been measured in centuries. If the values and traditions of a free people wither away, the free corporate structure cannot survive.

(2) The sense of human frustration in the world today is the most dangerous enemy of freedom. Frustration does not bludgeon a man into slavery. Its attack is more insidious. As the vampire bat which sucks blood while its victim sleeps, human frustration undermines the will to be free and plants the seeds of blind rebellion.

(3) My third point borders so closely on the obvious that I almost hesitate to share it with you. It is simply this: No human institution, whether it be a state, a church, a lodge, a labor union, or a corporation, can survive for very long the sustained mass disapproval of man.

Have we so hypnotized ourselves with bathtubs, telephones, central heating systems, and automobiles that mass production has become an end in itself, a kind of Twentieth Century worship of the Golden Calf?

Certainly the high priests of feudalism swore that theirs was the best of all possible worlds. But mass movement toward greater dignity and freedom of the individual destroyed feudalism in the western world after 1200 years of its existence. Many high priests of today's mass production cry out that this is the best of all possible worlds. Can we be sure that capitalism, an infant of less than 200 years, can survive a new human groping for spiritual satisfaction?

The greatest asset of those who would destroy free men and free institutions is the sense of human frustration which we, in our mad rush toward technological, but not human progress, have allowed to develop. The future—not only of a business system but perhaps of western humanitarian civilization — hangs upon the willingness of today's men of business to concentrate their brains and energies into an all-out attack on human frustration.

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According to Prescott of the University of Maryland, this is "the most potent nation in the world for driving people nuts." One out of 22 Americans is hospitalized for mental illness some time during his life.—(N. Y. Times, Nov. 2, 1950, page 37.)

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THE SOUTH AMBOY PORT EXPLOSION

(Excerpts of report by **The National Board of Fire Underwriters and The Fire Insurance Rating Organization of New Jersey.)**

When sudden destruction and havoc visited the trans-loading marine terminal in South Amboy and its across-the-bay neighbor, Perth Amboy, during the evening of May 19, 1950, the Amboys become heralded locations of another tragedy—much like Texas City in the wake of its disaster in 1947. This latest port explosion stressed again the perils of large-scale handling of explosives and other potentially dangerous articles. Four transfer lighters and several railroad cars loaded with 420 tons of explosives blew up at the Raritan River Port of South Amboy, N. J., on the evening of May 19, 1950.

Several important matters are spotlighted as "lessons learned." It certainly is necessary to give special heed to the problem of unsuspecting two-way encroachment of our growing communities and expanding hazardous enterprises on each other in areas that a relatively few

years ago were sparsely settled and isolated, and have since developed into "centers of concentrated habitation" and vulnerable "high-value districts."

Facts made public during the Coast Guard inquiry tend to bring out a degree of "disjointed looseness" in official approvals and inspection of munition assemblies, particularly in the commercial procurement of munitions previously considered unsafe and withdrawn from production and use by the military.

The government of Pakistan ordered for the second time within two months a shipment of anti-personnel and anti-tank mines from the Kilgore Manufacturing Company. In addition, Morrison-Knudson Afghanistan, Inc., Afghanistan, ordered a shipment of gelatin dynamite from the Hercules Powder Company. The necessary United States Department of State clearance was obtained and the required space on the Isbrandtsen Lines steamship "Flying Clipper," which was to sail to Pakistan, was procured.

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SELECTIVE SERVICE

All doctors and dentists under 50 years of age who had no military service after September, 1940, were required to register under Selective Service. . . . The American Institute of Physics has recommended to the National Security Resources Board that all scientists and engineers, whether of draft age or not, be required to register for Selective Service. . . . Dr. James A. Norton, eminent organic chemist, presents a discussion on Selective Service and the professional status of chemists. (From CEN 29, pages 104-5, January 8, 1951.)

Senators Kimball and Shank, Republicans, introduced a bill in the Washington State Legislature to reduce the sentences of prisoners eligible to serve in the armed forces, in the event of general mobilization.—(A.P., U.P., P.-I., Jan. 20, p. 4.)

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Two little ants were running along a cracker box when one of them said: "Why the heck are we running so fast?"

"We have to—it says right here, 'Tear along the dotted line'."—Isotopics.

PROGRESS THROUGH INTERNATIONAL COOPERATION

War, contrary to popular belief, does not stimulate scientific progress. Certainly it does not do so in therapeutics. The greatest progress came in the last two decades before World War II, which clearly demonstrates that war is not needed for artificial stimulation of research and therapeutic advance. The secrecy imposed by security regulations on wartime scientific research runs counter to the cross-fertilizing influence which results from free international flow of scientific knowledge. For example, in the case of penicillin, the development of which took place during World War II, the complete monograph of the chemical researches has only recently been published. In normal peacetime, thousands of papers undoubtedly would have been published.

Normal examples of "international cooperation" in times of peace include:

1. A free and vigorous international scientific press, the basic and fundamental tool of all scientific research.
2. International scientific congresses, which bring together men and ideas of all nations.
3. Free access to all countries for research foundations in the fields of medicine and public health.
4. Free exchange of scientific missions between countries.
5. Publication of scientific books in many languages.
6. International fellowships for foreign study.

A most outstanding example of therapeutic progress through international cooperation is the recent synthetic production of cortisone. This new therapeutic agent, which promises relief in arthritis in its various forms, represents the fruition of painstaking research by organic chemists and biochemists in the United States, Switzerland and Germany.

The advance of therapeutics through international co-operation represents perhaps the most civilized aspect of human behavior. —Quoted from R. E. Gruber in **The Merck Report.**

STUDENT AFFILIATION

The National Membership Committee announces that changes made in the A. C. S. Constitution, effective January 1, 1951, have altered membership requirements for students. Junior membership is now limited to those who have completed at least three-fourths of the prescribed curriculum in chemistry or chemical engineering or are students of graduate standing.

For those students in the first three yeyars of their course, STUDENT AFFILIATION with the A. C. S. is possible at the very reasonable rate of $3.50 the first year and $3.00 annually thereafter. A few of the benefits enjoyed by every student affiliate are that he —

1. Receives Chemical and Engineering News, the Weekly News Magazine of the Chemical World, at no cost above dues, which are approximately half what he would pay otherwise for a subscription to the magazine;
2. May subscribe at reduced rates to other journals published by the American Chemical Society;
3. Has the privilege of using at no charge the A. C. S. Employment Clearing House, an agency which has been helpful in aiding students to locate positions after graduation; and
4. May attend national, regional, divisional, and local section meetings of the Society on essentially the same basis as an A. C. S. member.

—**Ben Baldwin.**

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DEPARTMENTALIZATION OF KNOWLEDGE

(Abstract of paper by Marvin T. Herrick, University of Illinois, A. A. U. P. Bulletin, 36, 462-75 (1950). This abstract published by express permission of the author).

The most celebrated of Phi Beta Kappa orations is surely Emerson's **American Scholar**, delivered at Harvard in the late summer of 1837. In this speech, Emerson expressed the hope that America would stir its sluggard intellect and "fill the postponed expectation of the world with something better than the exertions of mechanical skill." While few will deny that this hope has been partially fulfilled, Americans are still known to the world primarily for their machines. Furthermore, the neglect of more humane exertions that Emerson found in our early American state still obtains; if anything, this neglect seems more fixed today, and it rests upon the same bases that Emerson described in 1837.

Emerson found that the American, in his multifarious social and ecenomic functions, had become "so minutely subdivided and peddled out," so diluted into small drops, that the essential American Man could not be gathered together. The priest had become a "form," the attorney a "statute book," the machinist a "machine." The American, in his preoccupation with altering matter, was neglecting the more important task of altering himself. He had forgotten that man should be one, united with all other men, pursuing the common purpose of building a better man. Emerson anticipated the familiar platitude of today, that our pursuit of knowledge has come to consist of learning more and more about less and less. Already in 1837 we were becoming a nation of narrow specialists.

Emerson, however, was not the first philosopher to deplore narrow specialization. Over two hundred years before him, Francis Bacon, often called the father of modern scientific inquiry, has discussed, in his **Interpretation of Nature**, "the impediments of knowledge in handling it by parts, and in slipping off particular sciences from the root and stock of universal knowledge." In other words, no particular art or science can be fully comprehended save in its relationship to other arts and sciences in its relationship to general knowledge. A particular art or science, for example, such as oratory or military science, needs other arts and sciences, not only for ornamental and practical purposes, as the orator makes use of psychology in persuading his audience or the general makes use of mathematics in building his fortifications, but for the correction and illumination of truth itself. In this zeal for specialization, when every man works apart, Bacon saw dangerously increasing

gaps between scholars and a growing hindrance to the unity of human knowledge.

Neither Bacon nor Emerson, in their most prophetic moments, could have foreseen the wholesale disregard of their admonitions that has generally accompanied the growth of our American universities.

In about sixty years, then, the modern academic department has been born, has grown, has divided and subdivided in seemingly endless propagation of its kind. Departments have split off from departments to become new departments, to become new schools and colleges. More often than not these subdivisions of knowledge have proceeded not as small streams spring from a common fountain, but rather as the amoeba divides, to become separate organisms pursuing separate ways. Within the college of liberal arts and sciences, natural philosophy and natural history have begot departments of chemistry, physics, astronomy and biology.

Another bad effect of this departmentalization of knowledge, perhaps the very worst effect is felt among the students, who are going to be the dispensers of knowledge in the next generation. In this scramble to departmentalize any and every partition of knowledge the student has become lost; he has become primarily a departmental item of enrollment. The university, broken into competing schools and departments, has lost sight of the only true end of education, which is to make good men and women. Our departments have no time to consider whether or not they are helping the undergraduates to become good men and women; they are too busy running their own departmental machinery; they are too busy competing for the enrollment of future physicists, chemists, zoologists, historians, teachers of English, social-welfare workers, personnel psychologists, and various other experts and technicians.

While it is true, then, that a few of us are genuinely concerned about the need for some general or basic education, and while there is a deal of talk about the dangers of too early and too much specialization and about the need for consolidating and synthesizing courses —"integrating" is the favorite term—the usual reforms proposed are anything but the only right one. Committees are continually exercised over the need for injecting some kind of basic, unified education in our various professional and technical curricula, which train but do not educate; **but no curriculum is ever willing to drop one of its own precious requirements and prerequisites.** Consequently the usual reform recommended is merely a lengthening of the undergraduate's training from four years to five or six years. Apparently we cannot bring ourselves to bate one departmental requirement, and meanwhile, as we argue, new requirements are added, new departments spring up.

Is this minute subdivision, this peddling out, of knowledge in our American universities to go on and on? I think that something should be done to stop it. Of course, I do not mean that we should try to do away with all specialization and technical training. What sensible man in this or in any other age would argue against expert knowledge and highly trained technicians? But I do believe that we should put first things first, and that specialization should be a unit within general knowledge and not a substitute for general knowledge. Vocational training is certainly better than no training. Some of our secondary schools and trade schools do admirable work in preparing boys and girls to take useful places in society, and I have no quarrel with the shops and laboratories of the high school, where some eighty per cent of the students never plan to go to college. Vocational training, however, is not the answer. I believe that it is possible for the other twenty per cent, who do go to college, to become specialists and also to have a good education. It is becoming increasingly difficult, however, for our undergraduates, yes, and for our graduate students as well, to acquire a good education, since our undergraduate colleges and our graduate schools are becoming more and more

like trade schools. And the principal cause of this failure to provide an opportunity for a good education is this unchecked departmentalization of knowledge. . . .

The large university, it seems to me, has now sunk to the same inept bureaucracy that characterizes the executive branch of our federal government.

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ART OF THE LIMERICK

(Continued from Page 17)

CENSURED

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PRICE OF GOLD

On the world's free markets, $43.25 were worth one ounce of gold on January 9, 1951.—Seattle Times, Jan. 9, page 22.

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Albert J. Cowell, 44, recently suffered a fatal heart attack after hooking a steelhead trout in the Tolt River.

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We Have One, Too

A new member of a certain government bureau made life miserable for his associates by pretending to absolute infallibility. One day, however, he startled his co-workers by admitting that once he had been wrong.

"You wrong?' exclaimed one of his listeners.

"Yes," replied the infallible man. "Once I thought I was wrong when I wasn't."—The Del-Chem Bulletin.

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If people would dare to speak to one another unreservedly, there would be a good deal less sorrow in the world a hnudred years hence.—Samuel Butler.

◆ ◆

Oh, where is the sea? the fishes cried, as they swam its crystal clearness through.—Minot Savage.

◆ ◆

It is not alone what we do, but also what we do not do, for which we are accountable.—Moliere.

REGIONAL EMPLOYMENT

By Dr. R. W. Moulton and
Prof. Rex Robinson

University of Washington

MElrose 0630

The Puget Sound Chemist will carry notices of positions vacant and wanted. This service is confidential, and available gratis to all employers and members of the American Chemical Society in this area. Rates for A.C.S. members not in the area $3.50 per issue for 50 words or less. Non-members, $7.50.

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DEADLINE FOR THE REGIONAL MEETING PAPERS IS APRIL 15

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WANTED—Editors for the Puget Sound Chemist. See Garth Putnam.

◆ ◆

When the Indians were running this country, there were no taxes, no debts, and the women did all the work—white men thought they could improve on a system like that.—The Condenser, Texas-La., local section.

◆ ◆

The trouble with doing what we ought to do is that it almost invariably interferes with what we want to do.—Journal of Commerce.

◆ ◆

WANTED — Copies of January Puget Sound Chemist. See Garth Putnam.

◆ ◆

The member of a missionary society approached one of our better known members recently, "We are having a raffle for a poor widow. Will you buy a ticket.

"Sorry, no," says our BKM, "My wife wouldn't let me keep her if I won."

◆ ◆

Laugh and grow fat is fine until you suceed. Then it isn't so funny.—Daily Olympian.

◆ ◆

Time is usually a dimension of truth. —Savery.

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